

**SUSTAINABLE STRATEGIES FOR GLOBAL LEADERS**

---

April 30, 2010

DELTA Project No. SCA8901A1D

SAP No. 136125

Mr. Arman Toumari

California Regional Water Quality Control Board Los Angeles Region

320 West 4<sup>th</sup> Street, Suite 200

Los Angeles, CA 90013

**Re: Well Abandonment Report**

**Former Shell Service Station**

**8901 South Atlantic Boulevard**

**South Gate, CA**

**ID # R-26326A**



Dear Mr. Toumari:

Delta Consultants (DELTA), on behalf of Equilon Enterprises LLC dba Shell Oil Products US (SHELL), has prepared this *Well Abandonment Report* for submittal to the California Regional Water Quality Control Board, Los Angeles Region (LARWQCB) for the above-referenced site. In a letter dated March 16, 2010, the LARWQCB, (Attachment A) granted approval to destroy monitoring wells MW-1 through MW-4. The purpose of this report is to document monitoring well abandonment activities. On April 7, 2010, DELTA submitted the Well Destruction Permit application to the Los Angeles County Department of Public Health (LACDPH) for approval. A copy of the approved well destruction permit is included as Attachment B.

## WELL ABANDONMENT ACTIVITIES

### FIELD WORK

The abandoned monitoring well locations are shown on Figure 2; boring logs for each well are included in Attachment C. Well names, depths and abandonment method are described in the following table.

Well Name	Date Abandoned	Well Depth	Abandonment Method
MW-1	4/28/2010	55	Pressure grout (with cement bentonite grout)/removed top 5 ft. casing/backfilled w/cement
MW-2	4/28/2010	55	Pressure grout (with cement bentonite grout)/removed top 5 ft. casing/backfilled w/cement
MW-3	4/29/2010	55	Pressure grout (with cement bentonite grout)/removed top 5 ft. casing/backfilled w/cement
MW-4	4/28/2010	55	Pressure grout (with cement bentonite grout)/removed top 5 ft. casing/backfilled w/cement

### WASTE DISPOSAL

Three drums of concrete and well box debris were generated during well abandonment activities and stored on-site in Department of Transportation (DOT)-approved 55-gallon drums. The drums were sealed and labeled in accordance with SHELL and DELTA protocols. The waste is temporarily stored on the subject property pending subsequent transportation to an appropriate disposal facility. The waste inventory record is presented in Attachment D.

### CLOSING REMARKS

This report represents DELTA's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. This document is based upon a specific scope of work requested by the client. The Contract between DELTA and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this document were performed. This report is intended only for the use of DELTA's Client and anyone else specifically listed on this report. DELTA will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, DELTA makes no express or implied warranty as to the contents of this report.

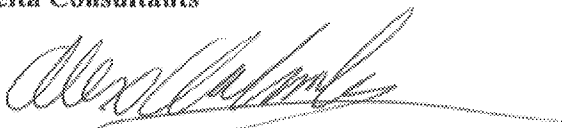
Should you have any questions or comments concerning this report, please contact Mr. Alex Chakmak (DELTA) at (626) 873-2748. The SHELL Project Manager is Mr. Joe Lentini, who may be reached at (310) 376-0649.

Mr. Arman Toumari  
California Regional Water Quality Control Board, Los Angeles Region  
April 30, 2010  
Page 3

Should you have any questions or comments concerning this report, please contact Mr. Alex Chakmak (DELTA) at (626) 873-2748. The SHELL Project Manager is Mr. Joe Lentini, who may be reached at (310) 376-0649.

Sincerely,

**Delta Consultants**



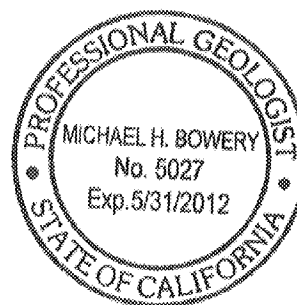
Alex Chakmak, P.G. 8719  
Project Manager



Michael H. Bowery, P.G. 5027  
Senior Project Manager

cc:

Mr. Joe Lentini - Shell Oil Products US  
Mr. Amine Klaeb - Property Owner



## **ATTACHMENTS:**

### **FIGURES**

Figure 1 – Site Location Map

Figure 2 – Site Map

### **ATTACHMENTS**

Attachment A – LARWQCB letter dated March 16, 2010

Attachment B – Well Destruction Permit

Attachment C – Boring Logs

Attachment D – Waste Inventory Record

## FIGURES

DRAWING NUMBER SCA8901AG

APPROVED BY

CHECKED BY

DRAWN BY

04/17/03

LUI



0 1000 FEET 0 500 1000 METERS  
Printed from TOPOI ©2001 National Geographic Holdings (www.topo.com)



SITE



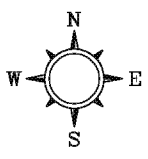
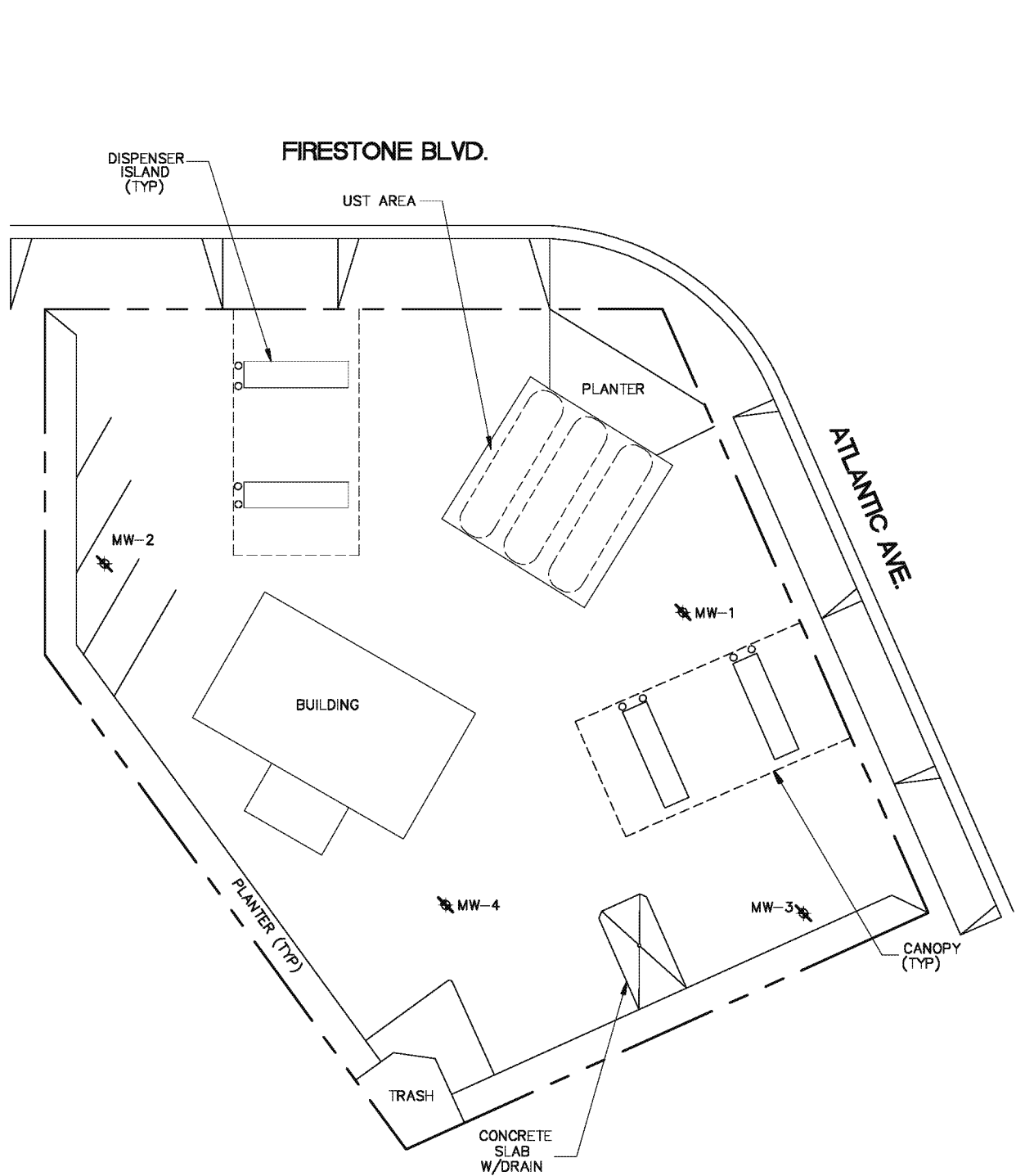
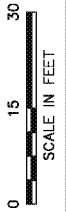
CONSULTANTS

SHELL OIL PRODUCTS US  
SHELL SERVICE STATION  
SOUTH GATE, CALIFORNIA

FIGURE 1  
SITE LOCATION MAP

8901 SOUTH ATLANTIC BOULEVARD  
SOUTH GATE, CALIFORNIA

PROJECT NUMBER	SCA8901AGD
APPROVED BY	
CHECKED BY	
DRAWN BY	J.F.F.
	4/28/2010



**LEGEND**

MW-1 ABANDONED GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION



SHELL OIL PRODUCTS US  
SHELL SERVICE STATION  
SOUTH GATE, CALIFORNIA

**FIGURE 2**

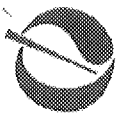
**SITE MAP**

8901 SOUTH ATLANTIC AVENUE  
SOUTH GATE, CALIFORNIA

**ATTACHMENT A**

**LARWQCB LETTER DATED FEBRUARY 23, 2010**





# California Regional Water Quality Control Board

## Los Angeles Region



Linda S. Adams  
Cal/EAP Secretary

320 W. 4th Street, Suite 200, Los Angeles, California 90013  
Phone (213) 576-6600 - FAX (213) 576-6640 - Internet Address: <http://www.waterboards.ca.gov/losangeles>

Arnold Schwarzenegger  
Governor

March 16, 2010

Mr. Joseph Lentini  
Shell Oil Products Company US  
20945 South Wilmington Avenue  
Carson, CA 90810

**UNDERGROUND STORAGE TANK PROGRAM – CASE CLOSURE**  
**SHELL SERVICE STATION #136125**  
**8901 SOUTH ATLANTIC AVENUE, SOUTH GATE, CA (ID NO. R-26326A) (PRIORITY A-2)**

Dear Mr. Lentini:

This letter confirms the completion of a site investigation and corrective action for the underground storage tank(s) formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank(s) are greatly appreciated.

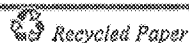
Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground tank(s) site is in compliance with the requirements of subdivision (a) and (b) of section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to section 25299.3 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

This notice is issued pursuant to subdivision (g) of section 25296.10 of the Health and Safety Code.

Because the subject site is currently an active gasoline service station, we recommend that you properly maintain all or some existing monitoring wells onsite, so that they would be available should further monitoring be deemed necessary. However, if you choose to abandon these wells, you must comply with the following:

1. All wells must be properly located and abandoned.
2. Well abandonment permits must be obtained from the Los Angeles County Department of Public Health, Environmental Health Division, and all other necessary permits must be obtained from the appropriate agencies prior to the start of work.
3. You must submit a report on the abandonment of the wells to this office by **May 17, 2010**. This report must include, at a minimum, a site map, a description of the well abandonment process, and copies of all signed permits.

*California Environmental Protection Agency*



*Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.*

Mr. Joseph Lentini  
8901 S. Atlantic Ave., South Gate

-2-

March 16, 2010

Please contact Dr. Yi Lu at (213) 576-6695 or Mr. Arman Toumari at (213) 576-6708, if you have any questions regarding this matter.

Sincerely,

  
Tracy J. Egoscue  
Executive Officer

cc: Yvonne Shanks, SWRCB, Underground Storage Tank Cleanup Fund  
Lilly Lee, State Water Resources Control Board, UST Cleanup Fund  
Nancy Matsumoto, Water Replenishment District of Southern California  
Matthew Gatewood, City of Los Angeles Fire Department  
Maroun and Nada Boutros, Amine Klaeb, Gouri Kohli, Property Owners  
Alex Chakmak, Delta

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*California Environmental Protection Agency*



Recycled Paper

*Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.*

**ATTACHMENT B**

**WELL DESTRUCTION PERMIT**

# WELL PERMIT APPLICATION - NON PRODUCTION WELLS

DRINKING WATER PROGRAM - ENVIRONMENTAL HEALTH DIVISION  
5050 COMMERCE DRIVE, BALDWIN PARK, CA 91706 TELE (626) 430-5420 FAX (626) 313-3016

DATE 4/7/10

☐ NEW WELL CONSTRUCTION ☐ RECONSTRUCTION OR RENOVATION ☒ DECOMMISSIONING ☐ OTHER:  
☒ MONITORING ☐ CATHODIC ☐ INJECTION ☐ EXTRACTION ☐ HEAT EXCHANGE  
☐ HYDROPHONIC ☐ C.P.T. (For Ground Water Sampling) ☐ OTHER:

**WELL LOCATION**  
Site Address: 8401 S. Atlantic Ave. City: South Gate Zip Code: 90280  
Nearest Intersection: Firestone Blvd. Thomas Guide Map Book Page/Grid: 705 E-3 Number of Wells in Each Parcel: 4

**WELL STRUCTURE**  
Total Depth of Well: Depth of Well Casing: Sanitary / Annular Sealing Material:  
Depth of Sanitary / Annular Seal: N/A Conductor Casing Seal:

**OWNER INFORMATION**  
Owner's Name: Shell Oil Products US Telephone Number: 310-376-0649  
Address: 20945 S. Wilmington Ave. City: Carson Zip Code: 90810

**DRILLER INFORMATION**  
Driller's Name: BC² Environmental, Inc. Telephone Number: 714-744-2990 C-37 License Number: 686355  
Address: 1150 West Trenton Ave. City: Orange Zip Code: 92667

**WELL DECOMMISSIONING INFORMATION**  
Well Depth: 55' Method of Well Assessment: Pressure Grout Depth and Number of Perforations: 30'-55'  
Type and Amount of Sealant: Neat Cement Type of Perforator: Size of Perforations: 0.010" Method of Upper Seal: Pressure Application

**CONSULTANT INFORMATION**  
Company: Delta Consultants  
Address: 911 S. Primrose Ave. Ste. K City: Monrovia State: CA Zip Code: 91016  
Project Manager: Alex Chakma K Telephone Number: 626-256-6662 Fax Number: 626-256-6263

**ATTENTION: WORK PLAN MODIFICATIONS MAY BE REQUIRED IF WELL AND GEOLOGIC CONDITIONS ENCOUNTERED AT THE SITE INSPECTION ARE FOUND TO DIFFER FROM THE SCOPE OF WORK PRESENTED TO THIS DEPARTMENT.**

I hereby agree to comply in every respect with all the regulations of the County Environmental Health Division and with all ordinances and laws of the County of Los Angeles and the State of California pertaining to well construction, reconstruction, and decommissioning data deemed necessary by the County Environmental Health Division Of Los Angeles County.

Signature of Applicant: [Signature] Printed Name: Walter L. Gilbert, Sr. 949-623-3250

**THIS PERMIT IS NOT COMPLETE UNTIL ALL OF THE FOLLOWING REQUIREMENTS ARE SIGNED OFF BY THE DEPUTY HEALTH OFFICER. WELL CONSTRUCTION OR DECOMMISSIONING CANNOT BE INITIATED WITHOUT A WORK PLAN APPROVAL FROM THIS DEPARTMENT.**



\*\*\*\*\* (DEPARTMENT USE ONLY) \*\*\*\*\*

<p>***** (DEPARTMENT USE ONLY) *****</p> <p>MTSIEBOS@PH.LACOUNTY.GOV (913) 351-5145</p>	
<p><b>WORK PLAN APPROVAL</b></p> <p>Conditions: On 4/28/10 \$804.00 was paid for permit # 890326 to abandon 9 monitoring wells by pressure grouting until the flow of cement slugs (95% Portland cement and 5% bentonite powder per weight). Maintain all setbacks. Observe the work plan submitted. Please notify me at least 48 hrs prior start of work to schedule on-site inspection.</p>	<p>REHS: MICHELLE TSIEBOS DATE: 4/14/10</p>
<p><b>FINAL INSPECTION</b></p> <p>The placement of the permit is hereby approved by the Deputy Health Officer to the permit to be valid. County of Los Angeles Department of Environmental Health</p>	<p>REHS: DATE:</p>

**NOTICE**  
This well permit approval is limited to compliance with the California Well Standards and the Los Angeles County Code and does not grant any rights to construct, reconstruct, or decommission any well. The applicant is responsible for securing all other necessary permits.

## **ATTACHMENT C**

### **BORING LOGS**



# BORING LOG

Client **Shell Oil Products US**  
Project Number **SCA1901R1D**

Well No.  
**IW-1**

**Address:**

**1901 N. Rose Avenue**  
**Oxnard, CA**  
Logged By: **TT**

Drilling Date(s): **03/11/10**

Drilling Company: **Gregg**

Drilling Method: **HSA**

Boring Depth (ft): **60'**

Boring diameter (in.): **10"**

Sampling Method: **Cal Mod SS**

Well Depth (ft.): **45'/59'**

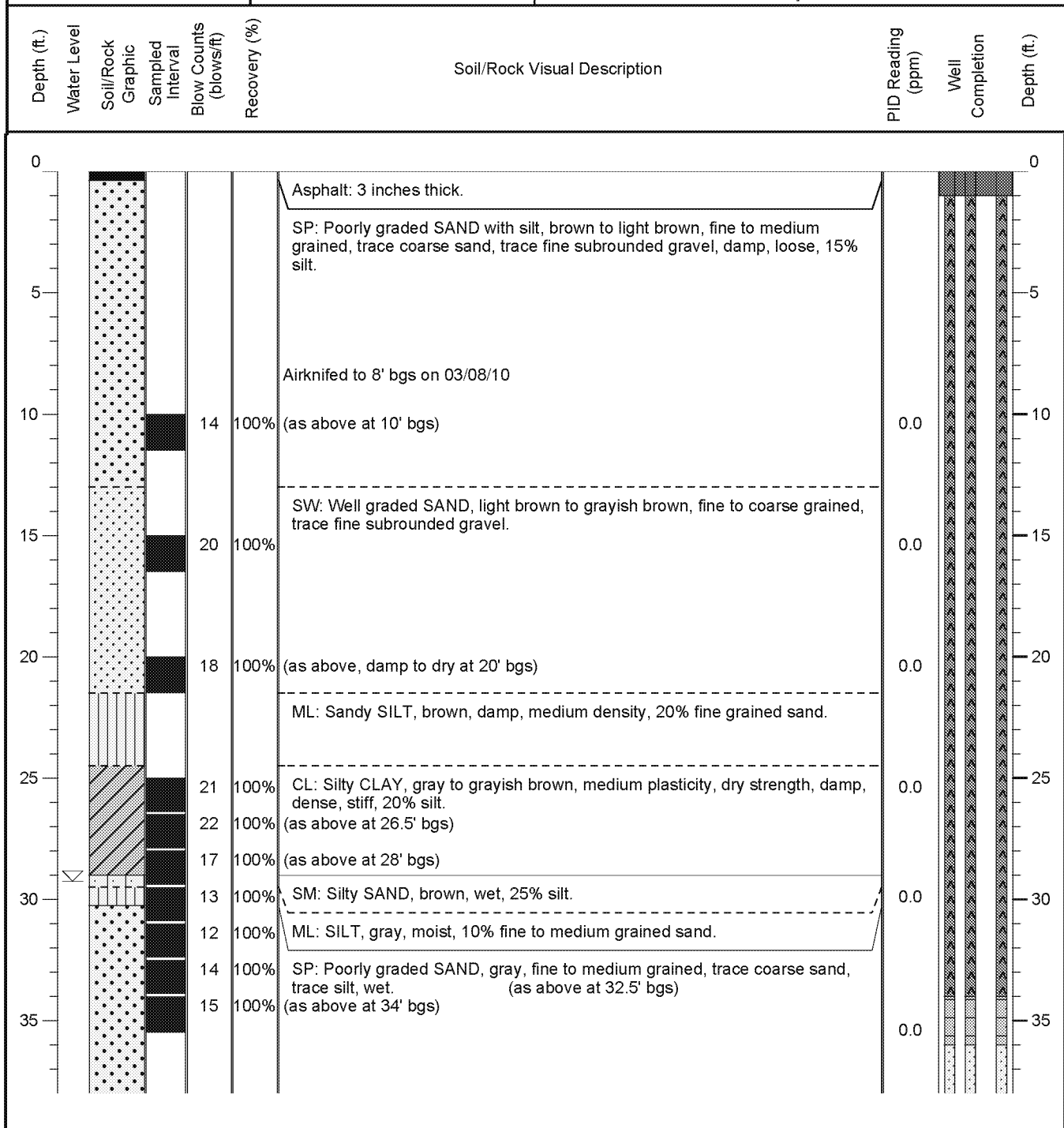
Casing Diameter (in.): **2"**

Casing Material: **Sch 40 PVC**

Screen Interval: **38'-40', 52'-54' bgs**

Screen slot size: **0.010"**

Sand Pack: **2/16**





# BORING LOG

Client **Shell Oil Products US**  
Project Number **SCA1901R1D**

Well No.  
**IW-1**

Address:

**1901 N. Rose Avenue**  
**Oxnard, CA**  
Logged By: **TT**

Drilling Date(s): **03/11/10**

Drilling Company: **Gregg**

Drilling Method: **HSA**

Boring Depth (ft): **60'**

Boring diameter (in.): **10"**

Sampling Method: **Cal Mod SS**

Well Depth (ft.): **45'/59'**

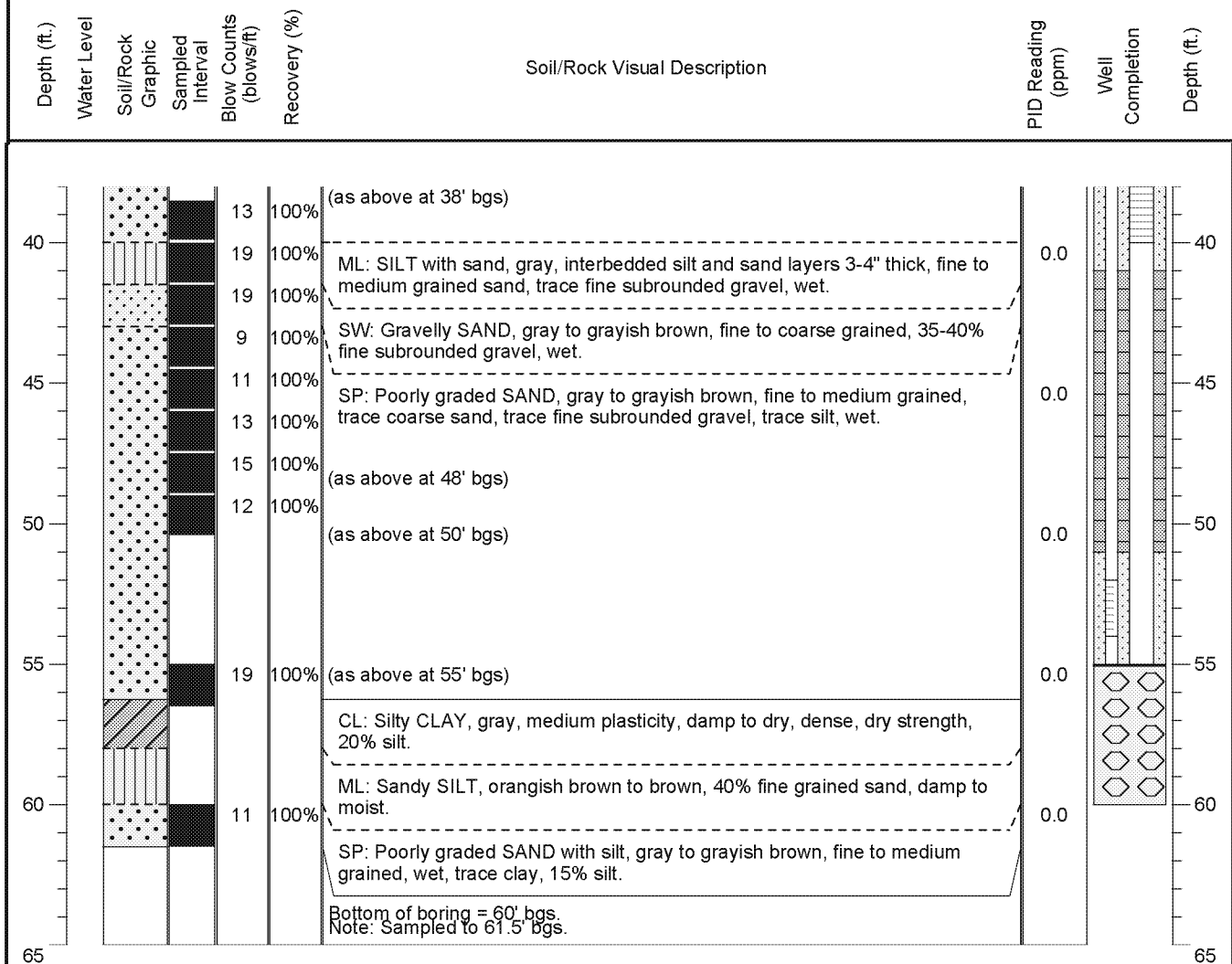
Casing Diameter (in.): **2"**

Casing Material: **Sch 40 PVC**

Screen Interval: **38'-40', 52'-54' bgs**

Screen slot size: **0.010"**

Sand Pack: **2/16**





# BORING LOG

Client **Shell Oil Products US**  
Project Number **SCA1901R1D**

Well No.  
**PZ-1**

Address:

**1901 N. Rose Avenue  
Oxnard, CA**

Logged By: **TT**

Drilling Date(s): **03/12/10**

Drilling Company: **Gregg**

Drilling Method: **HSA**

Boring Depth (ft): **55'**

Boring diameter (in.): **10"**

Sampling Method: **Cal Mod SS**

Well Depth (ft.): **40'/55'**

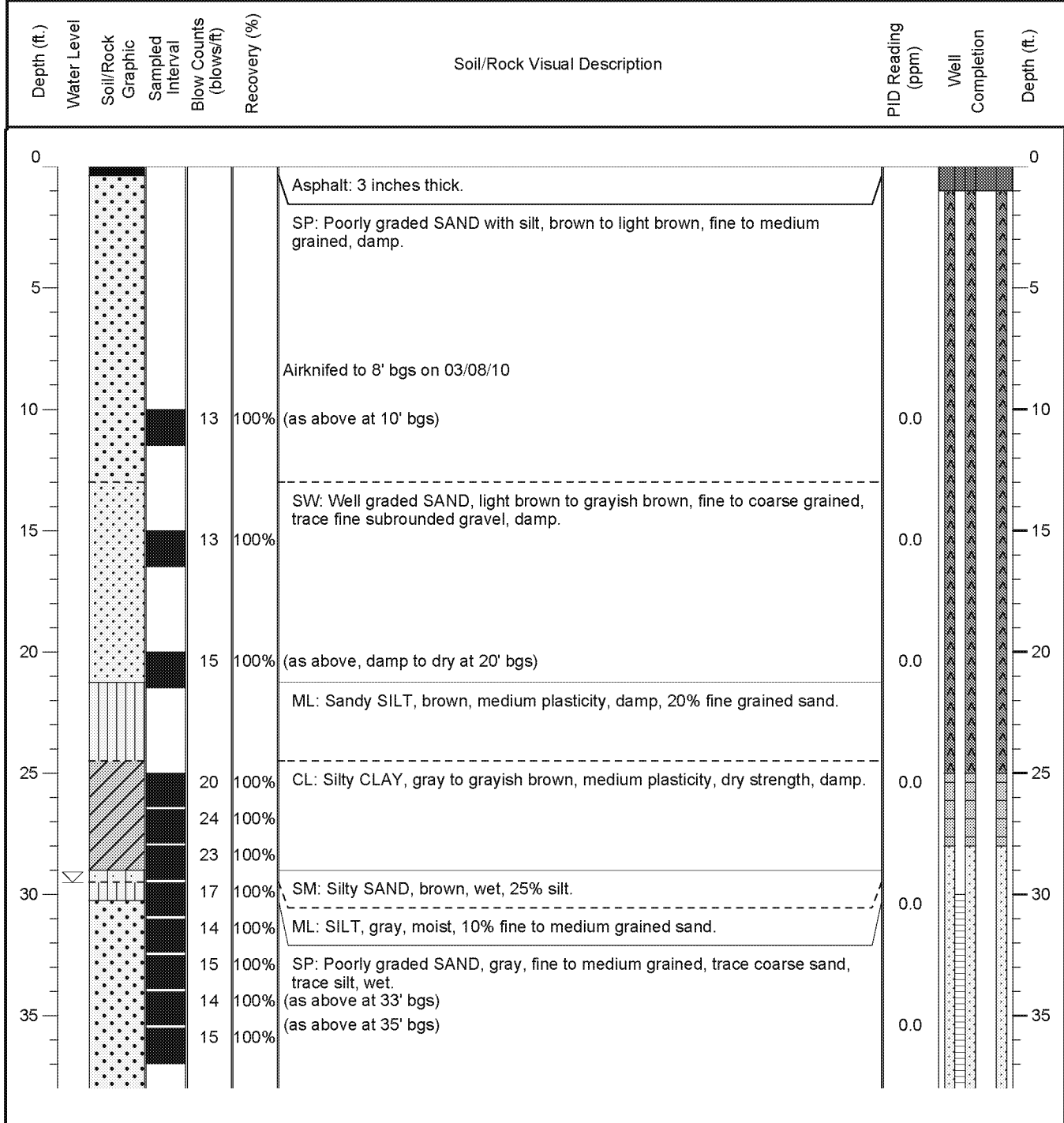
Casing Diameter (in.): **2"**

Casing Material: **Sch 40 PVC**

Screen Interval: **30'-40';45'-55' bgs**

Screen slot size: **0.010"**

Sand Pack: **2/16**







# BORING LOG

Client **Shell Oil Products US**  
Project Number **SCA1901R1D**

Well No.  
**PZ-1**

Address:

**1901 N. Rose Avenue**  
**Oxnard, CA**  
Logged By: **TT**

Drilling Date(s): **03/12/10**

Drilling Company: **Gregg**

Drilling Method: **HSA**

Boring Depth (ft): **55'**

Boring diameter (in.): **10"**

Sampling Method: **Cal Mod SS**

Well Depth (ft.): **40'/55'**

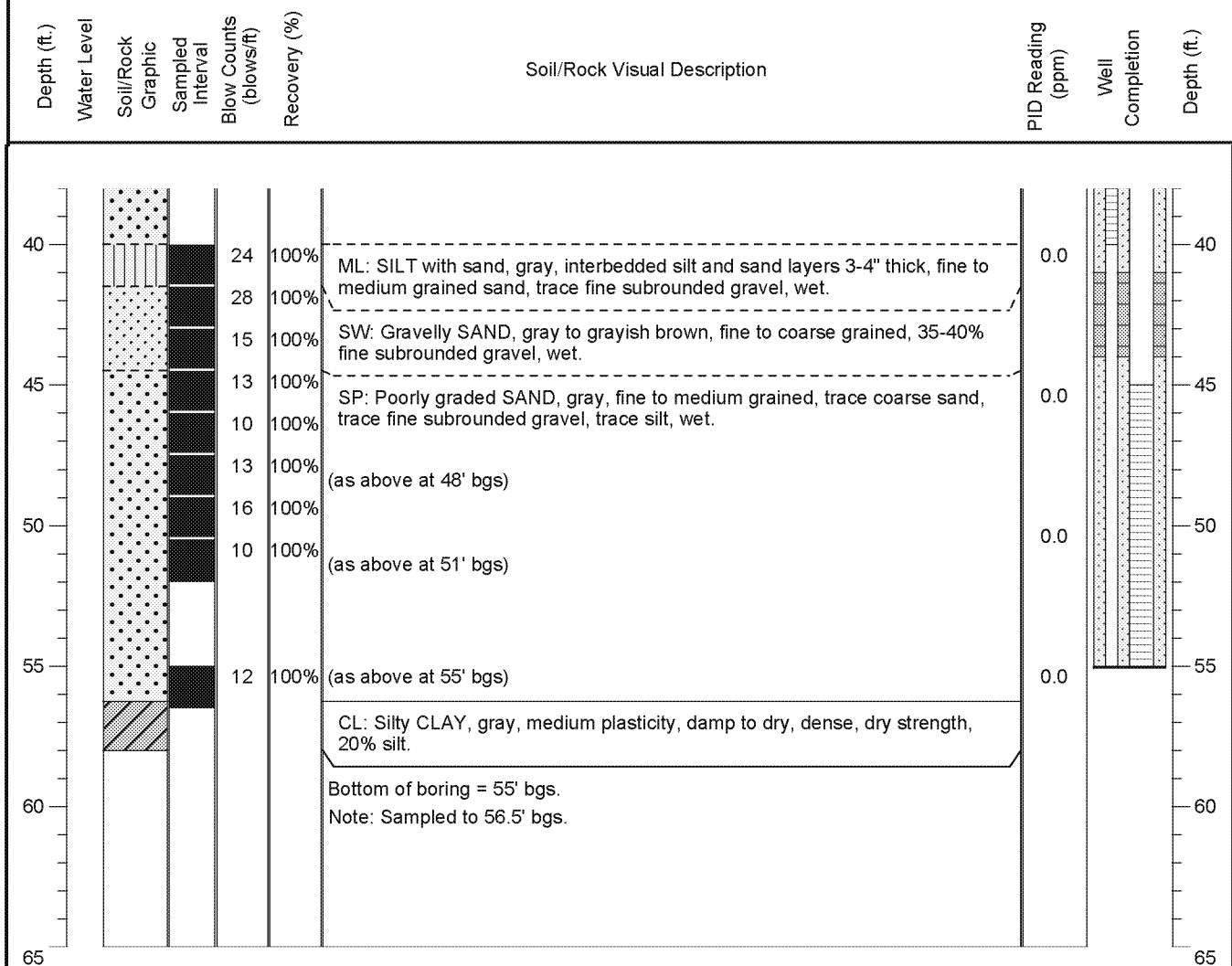
Casing Diameter (in.): **2"**

Casing Material: **Sch 40 PVC**

Screen Interval: **30'-40';45'-55' bgs**

Screen slot size: **0.010"**

Sand Pack: **2/16**





# BORING LOG

Client **Shell Oil Products US**  
Project Number **SCA1901R1D**

Well No.  
**PZ-2**

**Address:**

**1901 N. Rose Avenue**  
**Oxnard, CA**  
Logged By: **TT**

Drilling Date(s): **03/12/10**

Drilling Company: **Gregg**

Drilling Method: **HSA**

Boring Depth (ft): **55'**

Boring diameter (in.): **10"**

Sampling Method: **Cal Mod SS**

Well Depth (ft.): **40'/55'**

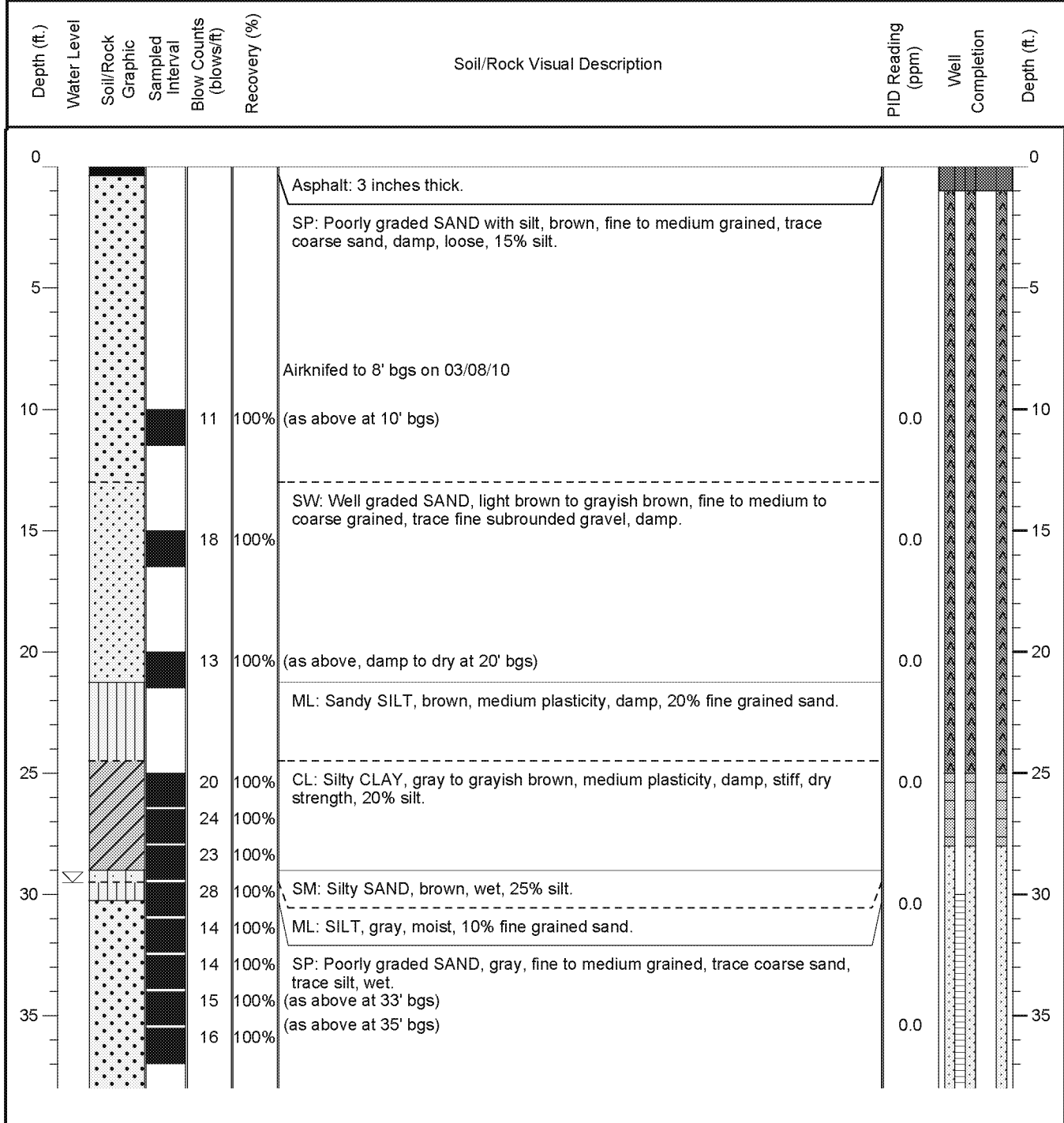
Casing Diameter (in.): **2"**

Casing Material: **Sch 40 PVC**

Screen Interval: **30'-40';45'-55' bgs**

Screen slot size: **0.010"**

Sand Pack: **2/16**





# BORING LOG

Client **Shell Oil Products US**  
Project Number **SCA1901R1D**

Well No.  
**PZ-2**

**Address:**

**1901 N. Rose Avenue**  
**Oxnard, CA**  
Logged By: **TT**

Drilling Date(s): **03/12/10**

Drilling Company: **Gregg**

Drilling Method: **HSA**

Boring Depth (ft): **55'**

Boring diameter (in.): **10"**

Sampling Method: **Cal Mod SS**

Well Depth (ft.): **40'/55'**

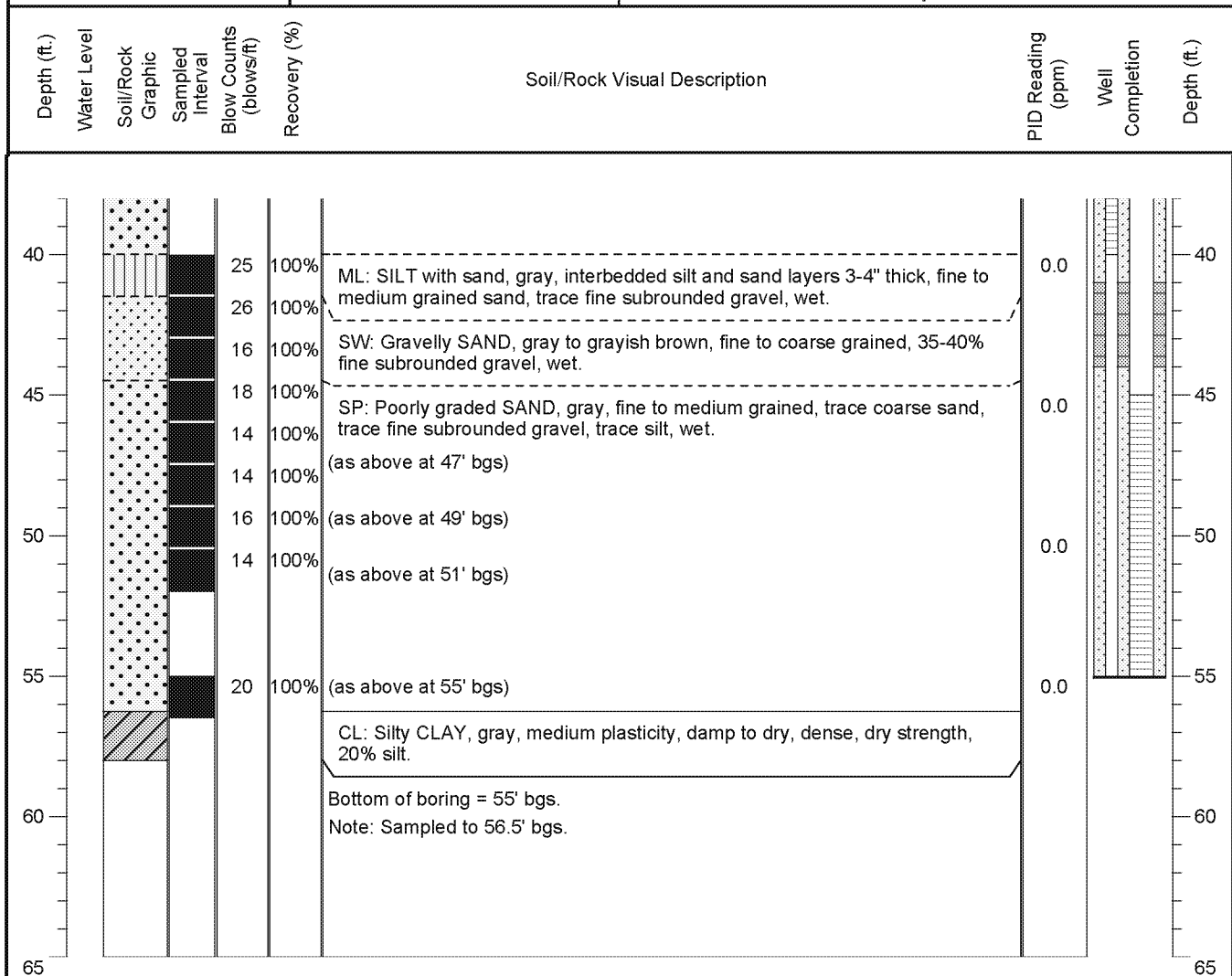
Casing Diameter (in.): **2"**

Casing Material: **Sch 40 PVC**

Screen Interval: **30'-40';45'-55' bgs**

Screen slot size: **0.010"**

Sand Pack: **2/16**





# BORING LOG

Client **Shell Oil Products US**  
Project Number **SCA1901R1D**

Well No.  
**PZ-3A/B**

Address:

**1901 N. Rose Avenue**  
**Oxnard, CA**  
Logged By: **TT**

Drilling Date(s): **03/10/10**

Drilling Company: **Gregg**

Drilling Method: **HSA**

Boring Depth (ft): **55'**

Boring diameter (in.): **10"**

Sampling Method: **Cal Mod SS**

Well Depth (ft.): **40'/55'**

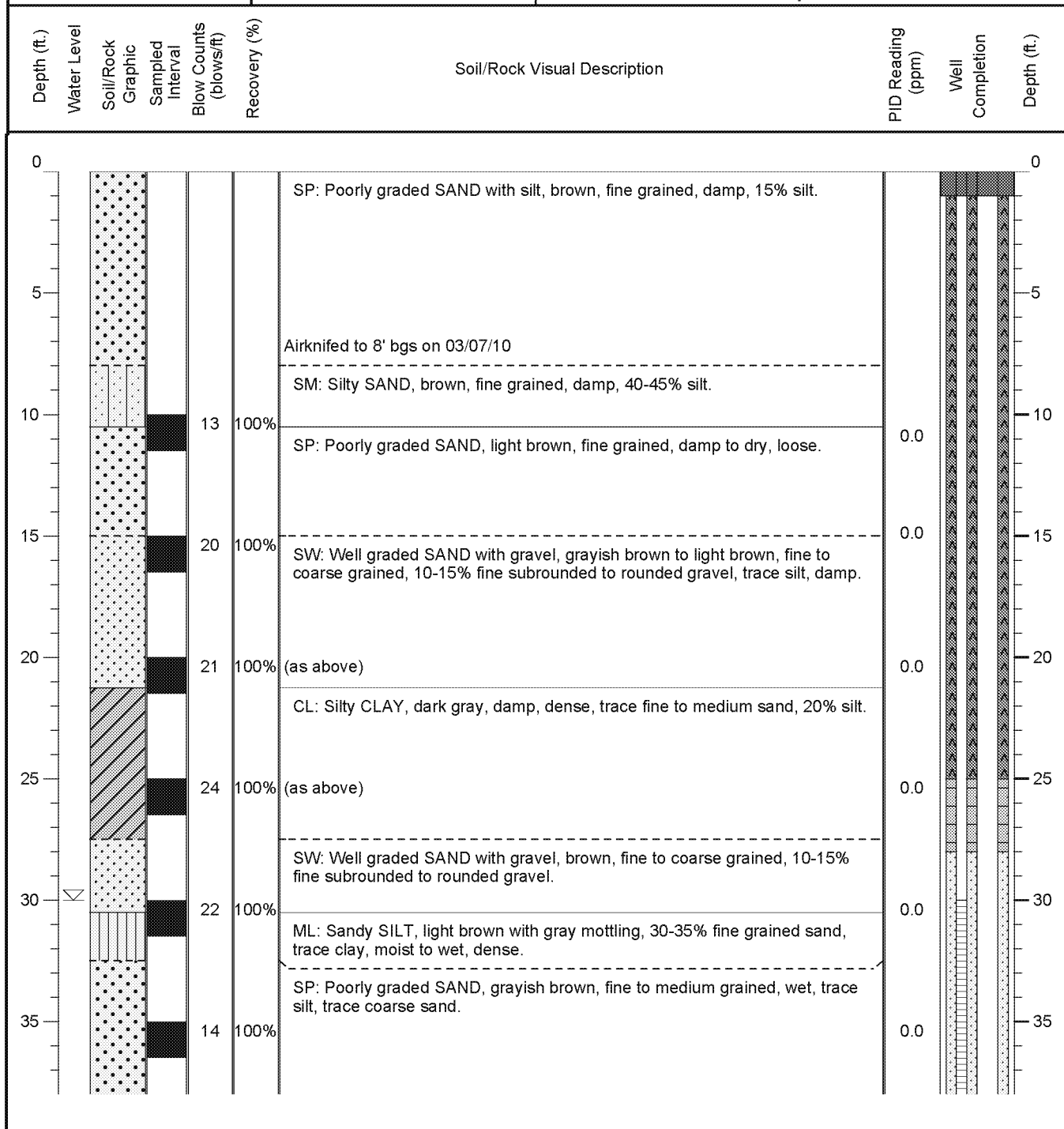
Casing Diameter (in.): **2"**

Casing Material: **Sch 40 PVC**

Screen Interval: **30'-40';45'-55' bgs**

Screen slot size: **0.010"**

Sand Pack: **2/10**





# BORING LOG

Client **Shell Oil Products US**  
Project Number **SCA1901R1D**

Well No.  
**PZ-3A/B**

Address:

**1901 N. Rose Avenue  
Oxnard, CA**

Logged By: **TT**

Drilling Date(s): **03/10/10**

Drilling Company: **Gregg**

Drilling Method: **HSA**

Boring Depth (ft): **55'**

Boring diameter (in.): **10"**

Sampling Method: **Cal Mod SS**

Well Depth (ft.): **40'/55'**

Casing Diameter (in.): **2"**

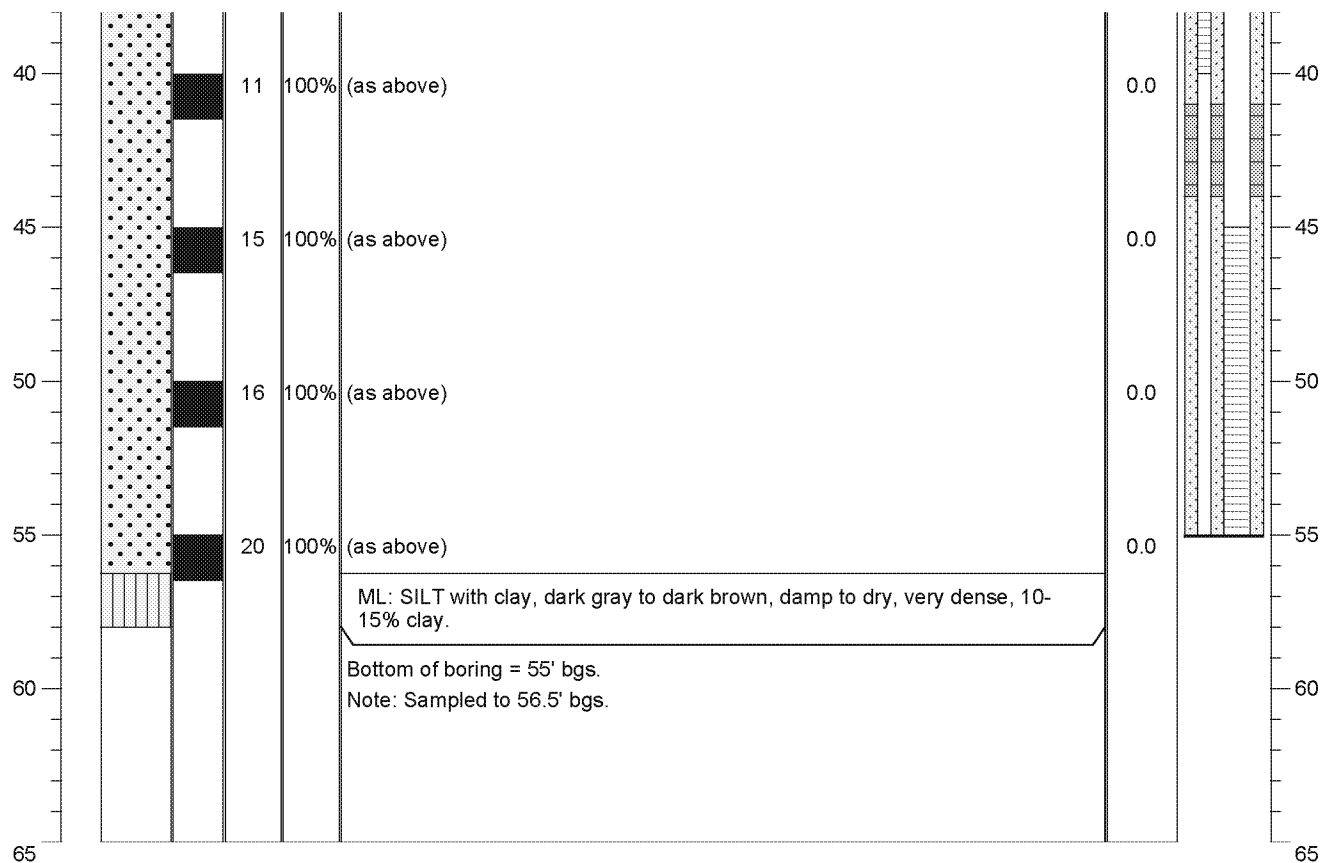
Casing Material: **Sch 40 PVC**

Screen Interval: **30'-40';45'-55' bgs**

Screen slot size: **0.010"**

Sand Pack: **2/10**

Depth (ft.)	Water Level	Soil/Rock Graphic	Sampled Interval	Blow Counts (blows/ft)	Recovery (%)	Soil/Rock Visual Description	PID Reading (ppm)	Well Completion	Depth (ft.)
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BORING LOG

Client Shell Oil Products US  
Project Number SCA1901R1D

Well No.  
PZ-4A/B

Address:  
1901 N. Rose Avenue  
Oxnard, CA  
Logged By: TT

Drilling Date(s): 03/09/10-03/11/10  
Drilling Company: Gregg  
Drilling Method: HSA  
Boring Depth (ft): 58'

Boring diameter (in.): 10"  
Sampling Method: Cal Mod SS  
Well Depth (ft.): 43'/55'  
Casing Diameter (in.): 2"

Casing Material: Sch 40 PVC  
Screen Interval: 33'-43';50'-55' bgs  
Screen slot size: 0.010"  
Sand Pack: 2/10

Depth (ft.)	Water Level	Soil/Rock Graphic	Sampled Interval	Blow Counts (blows/ft)	Recovery (%)	Soil/Rock Visual Description	PID Reading (ppm)	Well Completion	Depth (ft.)
0						Asphalt: 3 inches thick.			0
						SP: Poorly graded SAND with silt, brown to light brown, fine to medium grained, damp, 10-15% silt.			
5						Airknifed to 8' bgs on 03/07/10			5
						SM: Silty SAND, brown, fine grained, damp, 40-45% silt.			
10				13	100%	SP: Poorly graded SAND, light brown, fine grained, damp, loose, trace silt.	0.0		10
15				18	100%	SW: Well graded SAND with gravel, grayish brown to light brown, fine to coarse grained, 10-15% fine subrounded to rounded gravel, trace silt, damp.	0.0		15
20				17	100%	(as above at 20' bgs)	0.0		20
				19	100%	CL: Silty CLAY, dark gray, damp, dense, trace fine to medium sand, 20% silt.			
25				20	100%				25
				24	100%	(as above at 25' bgs)	0.0		
				21	100%	(as above at 26.5' bgs)			
				17	100%	(as above at 28' bgs)			
30				20	100%	SW: Well graded SAND with gravel, brown, fine to coarse grained, 15% fine subrounded to rounded gravel, wet.	0.0		30
				23	100%	ML: Sandy SILT, light brown with gray mottling, 30-35% fine sand, trace clay, moist to wet, dense.			
				17	100%				
35				12	100%	SP: Poorly graded SAND, fine to medium grained, grayish brown, wet, trace silt, trace coarse sand.	0.0		35
				15	100%	(as above at 35' bgs)			
						(as above at 36.5' bgs)			



BORING LOG

Client Shell Oil Products US  
Project Number SCA1901R1D

Well No.  
PZ-4A/B

Address:  
1901 N. Rose Avenue  
Oxnard, CA  
Logged By: TT

Drilling Date(s): 03/09/10-03/11/10  
Drilling Company: Gregg  
Drilling Method: HSA  
Boring Depth (ft): 58'

Boring diameter (in.): 10"  
Sampling Method: Cal Mod SS  
Well Depth (ft.): 43'/55'  
Casing Diameter (in.): 2"

Casing Material: Sch 40 PVC  
Screen Interval: 33'-43';50'-55' bgs  
Screen slot size: 0.010"  
Sand Pack: 2/10

Depth (ft.)	Water Level	Soil/Rock Graphic	Sampled Interval	Blow Counts (blows/ft)	Recovery (%)	Soil/Rock Visual Description	PID Reading (ppm)	Well Completion	Depth (ft.)
40				15	100%	(as above at 38' bgs)			
				11	100%	(as above at 40' bgs)			
				13	100%	(as above at 41.5' bgs)			
45				20	100%	(as above at 44.5' bgs)			
				25	100%	(as above, gravel increasing at 46' bgs)			
						CL: CLAY, gray, medium plasticity, damp, very dense, medium dry strength.			
50				17	100%	SP: Poorly graded SAND, grayish brown to gray, fine to medium grained, trace coarse sand, wet.			
				18	100%	(as above at 51' bgs)			
55				36	100%	(as above at 54' bgs)			
				38	100%	CL: Silty CLAY, gray, medium plasticity, damp to dry, dense, dry strength, 20% silt.			
				30	100%	ML: Sandy SILT, orangish brown to brown, 40% fine sand, damp to moist.			
60						Bottom of boring = 58' bgs. Note: Sampled to 58.5' bgs.			
65									

**ATTACHMENT D**

**WASTE INVENTORY RECORD**



